

Listing of Claims

1. (Currently Amended) A nanoparticle, which encapsulates a fluorescent material, wherein the nanoparticle comprises a fluorescent dye based on entrapment of a protein-dye conjugate or a DNA-dye conjugate within the nanoparticle and wherein the nanoparticle is derived from a sol gel.

Claims 2. - 5. (Canceled)

6. (Currently Amended) A nanoparticle according to claim 1, wherein the nanoparticle is substantially spherical and has a diameter of ~~from~~ 30 to 500 nm.

7. (Currently Amended) A nanoparticle according to claim 1, wherein the dye is selected from Texas Red-~~labelled~~labeled gelatin, porcine thyroglobulin, and fluorescein-~~labelled~~labeled bovine serum albumin or gelatin.

8. (Previously presented) A nanoparticle according to claim 1, wherein the surface of the nanoparticle is modified to enable the nanoparticle to be provided with a surface coating.

9. (Previously presented) A nanoparticle according to claim 8, wherein the nanoparticle is capable of being modified by passive adsorption or via covalent attachment to coat its surface with hydrophobic molecules.

10. (Previously presented) A nanoparticle according to claim 9, wherein the hydrophobic molecules are selected from phosphatidylcholine and phosphatidylethanolamine.

11. (Currently Amended) A nanoparticle according to claim-~~2~~1, wherein the sol gel-derived nanoparticle comprises a Texas Red-porcine thyroglobulin conjugate embedded within the nanoparticle.

12. (Previously presented) A nanoparticle according to claim 1, wherein the particle comprises a high fluorescence intensity nanoparticle.

13. (Previously presented) A nanoparticle according to claim 1, wherein the surface coating is lipophilic.

14. (Previously presented) A nanoparticle according to claim 1, wherein the particle is adapted to bind to a sebum-derived component.

15. (Previously presented) A nanoparticle according to claim 14, wherein the sebum-derived component is selected from the group comprising waxes, cholesterol and squalene.

16. (Previously presented) A nanoparticle according to claim 13, wherein the surface coating is selected from phosphatidylcholine and phosphatidylethanolamine.

17. (Previously presented) A nanoparticle according to claim 8, wherein the coating is passively adsorbed directly onto the sol gel particle.

18. (Previously presented) A nanoparticle according to claim 1, wherein the nanoparticle is formed from TEMOS (tetramethyloxysilane).

19. (Previously presented) A nanoparticle according to claim 18, wherein the nanoparticle comprises an aminopropylloxysilane-derived sol gel.

Claims 20. – 22. (Canceled)

23. (Previously presented) A nanoparticle according to claim 1, wherein the nanoparticle is an uncoated nanoparticle and carries either a net negative or a net positive charge.

24. (Previously presented) A nanoparticle according to claim 1, wherein the nanoparticle is provided with a hydrophilic coating.

25. (Previously presented) A nanoparticle according to claim 24, wherein the coating carries either a net negative or a net positive charge.

26. (Previously presented) A nanoparticle according to claim 24, wherein the hydrophilic coating comprises polylysine.

27. (Currently Amended) A method of detecting fingerprints ~~which comprises,~~
comprising:
determining details of fingerprint substructures with the nanoparticle according to claim 1.

28. (canceled).

29. (Previously presented) The method according to claim 27, wherein determining details of fingerprint substructures includes scanning the fingerprint substructures at an excitation wavelength that induces the fluorescent material to fluoresce.

30. (Previously presented) The method according to claim 29, wherein the scanning is at an excitation wavelength of 595 nm.